

**2006 Texas Revisions
to the 2006 International Building Code**

Chapter 16
Structural Design

Revise Section 1609.1.1 to read as follows:

1609.1.1 Determination of wind loads. Wind loads on every building or structure shall be determined in accordance with Chapter 6 of ASCE 7. The type of opening protection required, the basic wind speed and the exposure category for a site is permitted to be determined in accordance with Section 1609 or ASCE 7. Wind shall be assumed to come from any horizontal direction and wind pressures shall be assumed to act normal to the surface considered.

Exceptions:

1. Subject to the limitations of Section 1609.1.1.1, the provisions of SBCCI SSTD 10 shall be permitted for applicable Group R-2 and R-3 buildings.
2. Subject to the limitations of Section 1609.1.1.1, residential structures using the provisions of the AF&PA WFCM.
3. Designs using NAAMM FP 1001.
4. Designs using TIA/EIA-222 for antenna-supporting structures and antennas.
5. Subject to the limitations of Section 1609.1.1.1, the provisions of *Institute for Business and Home Safety (IBHS) Guidelines for Hurricane Resistant Residential Construction* shall be permitted for applicable Group R-2 and R-3 buildings.

Revise Section 1609.1.1.1 to read as follows:

1609.1.1.1 Applicability. The provisions of SSTD 10 are applicable only to buildings located within Exposure B or C as defined in Section 1609.4. The provisions of the *IBHS Guidelines for Hurricane Resistant Residential Construction* are applicable only to buildings located within Exposure B. The provisions of SBCCI SSTD 10 and the AF&PA WFCM shall not apply to buildings sited on the upper half of an isolated hill, ridge or escarpment meeting the following conditions:

1. The hill, ridge or escarpment is 60 feet (18 288 mm) or higher if located in Exposure B or 30 feet (9144 mm) or higher if located in Exposure C;
2. The maximum average slope of the hill exceeds 10 percent; and
3. The hill, ridge or escarpment is unobstructed upwind by other such topographic features for a distance from the high point of 50 times the height of the hill or 1 mile (1.61. km), whichever is greater.

Revise Section 1609.1.2 to read as follows:

1609.1.2 Protection of openings. For structures located in the Inland II area as adopted by the Texas Department of Insurance, protection of exterior openings from windborne debris is not required. For structures located in the Inland I area as adopted by the Texas Department of Insurance, glazed exterior openings in buildings shall be impact resistant or protected with an impact-resistant covering. For structures located in the Seaward area, as adopted by the Texas Department of Insurance, all exterior openings in windborne debris regions, glazing in buildings shall be impact resistant or protected with an impact-resistant covering. Exterior openings shall include exterior windows, exterior doors, garage doors, and skylights. Exterior opening protection for windborne debris shall meeting the requirements of an approved impact-resisting standard or ASTM E 1996 and ASTM E 1886 referenced therein as follows:

1. ~~Glazed~~Exterior openings located within 30 feet (9144 mm) of grade shall meet the requirements of the Large Missile Test of ASTM E 1996.
2. ~~Glazed~~Exterior openings located more than 30 feet (9144 mm) above grade shall meet the provisions of the Small Missile Test of ASTM E 1996.

Exterior opening protection shall be installed in accordance with the manufacturer's approved installation instructions for the manner in which they were tested for uniform static wind pressure resistance and for windborne debris resistance. Removable windborne debris protection shall have installation instructions provided.

Exceptions:

1. For structures located in the Inland I area, ~~Wood structural plywood~~ panels with a minimum thickness of $\frac{7}{16}$ $\frac{15}{32}$ inch (44 12 mm) and a maximum span of 8 feet (2438 mm) shall be permitted for opening protection in one- and two-story buildings. Panels shall be pre-cut so that they shall be attached to the buildings framing surrounding the opening containing the product with the glazed opening. Panels shall be installed on the exterior side of the building. Panels shall be labeled or marked to identify the proper installation location on the building. Panels shall be secured with the attachment hardware provided. Installation instructions shall be provided. Attachments shall be designed to resist the components and cladding loads determined in accordance with the provisions of ASCE 7. Attachment in accordance with Table 1609.1.2 is permitted for buildings with a mean roof height of 33 feet (10 058 mm) or less where wind speeds do not exceed 130 mph (57.2 m/s).
- ~~2. Glazing in Occupancy Category I buildings as defined in Section 1604.5, including greenhouses that occupied for growing plants on a production or research basis, without public access shall be permitted to be unprotected.~~
2. Glazing in Occupancy Category II, III, or IV buildings located over 60 feet (18 288 mm) above the ground and over 30 feet (9 144 mm) above aggregate surface roofs located within 1,500 feet (458 m) of the building shall be permitted to be unprotected.

TABLE 1609.1.2
WINDBORNE DEBRIS PROTECTION FASTENING SCHEDULE
FOR WOOD STRUCTURAL PANELS USED IN THE INLAND I AREA ^{a,b,c,d}

FASTENER TYPE	FASTENER SPACING (inches)		
	Panel span ≤ 4 feet	4 feet < panel span ≤ 6 feet	6 feet < panel span ≤ 8 feet
No. 6 Screws	16"	12"	9"
No. 8 Screws	16"	16"	12"

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound = 4.4 N, 1 mile per hour = 0.44 m/s

- a. This table is based on a maximum wind speed (3 second gust) of 130 mph and a 33-foot mean roof height.
- b. Fasteners shall be installed at opposing ends of the wood structural panel. Fasteners shall be located a minimum of 1" from the edge of the panel.
- c. Fasteners shall be long enough to penetrate through the exterior wall covering and a minimum of 1 $\frac{3}{4}$ " into wood wall framing; a minimum of 1 $\frac{1}{4}$ " into concrete block or concrete; or into steel framing by at least three threads. Fasteners shall be located a minimum of 2 $\frac{1}{2}$ " from the edge of concrete block or concrete.
- d. Where screws are attached to masonry or masonry/stucco, they shall be attached utilizing vibration-resistant anchors having a minimum withdrawal capacity of 490 pounds.

3. For structures located in the Seaward area, plywood panels with a minimum thickness of $\frac{15}{32}$ inch (12 mm) shall be permitted for exterior opening protection in one- and two-story buildings. Panels shall be pre-cut so that they shall be attached to the buildings framing surrounding the opening containing the exterior opening product. Panels shall be installed on the exterior side of the building. Panels shall be labeled or marked to identify the proper installation location on the building. Panels shall be secured with the attachment hardware provided. Installation instructions shall be provided. The panels and their attachment to the structure shall meet the requirements of the Large Missile Test using either an approved impact resisting standard or ASTM E 1996 and ASTM E 1886 referenced therein. The panels shall be installed in accordance with the manner in which they were tested for uniform static wind pressure resistance and for windborne debris resistance.

Add the following new section:

1609.1.2.2 Garage Doors. Garage door opening protection for windborne debris shall meet the requirements of an approved impact-resisting standard, ASTM E 1886 and ASTM E 1996 or ANSI/DASMA 115.

Chapter 17
Structural Tests and Special Inspections

Add the following new section:

CORROSION RESISTANCE

1716.1 Corrosion resistance. Metal connectors and fasteners shall be corrosion resistant in accordance with the following:

1716.1.1 Seaward areas.

1716.1.1.1 Open Areas. Metal connectors and fasteners located in open areas shall be either stainless steel and meet ASTM A167; hot-dip galvanized after fabrication and meet ASTM A123 or ASTM A153; or hot-dip galvanized or galvanized prior to fabrication and meet ASTM A653. Open areas shall include:

1. Porches
2. Decks
3. Carports
4. Exterior wall coverings
5. Roof coverings
6. Metal ties for stone and masonry veneer
7. The underside of elevated structures
8. Anchors for securing mechanical equipment
9. Garage door attachments
10. Roof vent attachments
11. Skylight attachments
12. Impact protective systems (shutters)

1716.1.1.2 Vented or Enclosed Areas. Metal connectors and fasteners located in vented or enclosed areas may meet the requirements of Section 1716.1.1.1 or shall be hot-dip galvanized or electrogalvanized in accordance with ASTM A641; mechanically deposited zinc coatings in accordance with ASTM B695; or electrodeposited zinc coatings in accordance with ASTM B633. Vented or enclosed areas shall include:

1. Attics
2. Exterior wall stud cavities
3. Crawl spaces
4. Window and exterior door attachments
5. Roof sheathing
6. Wall sheathing

Exception (corrosion resistance not required):

1. One-half inch diameter or greater steel bolts

1716.1.1.3 Conditioned Areas. Metal connectors and fasteners located in conditioned areas are not required to be corrosion resistant. Conditioned areas include:

1. Heated and cooled living areas

1716.1.2 Inland I areas.

1716.1.2.1 Open Areas. Metal connectors and fasteners located in open areas shall be either stainless steel and meet ASTM A167; hot-dip galvanized after fabrication and meet ASTM A123 or ASTM A153; hot-dip galvanized or galvanized prior to fabrication and meet ASTM A653; hot-dip galvanized or electrogalvanized in accordance with ASTM A641; mechanically deposited zinc coatings in accordance with ASTM B695; or electrodeposited zinc coatings in accordance with ASTM B633. Open areas shall include:

1. Porches
2. Decks
3. Carports
4. Exterior wall coverings
5. Roof coverings
6. Metal ties for stone and masonry veneer
7. The underside of elevated structures
8. Anchors for securing mechanical equipment
9. Garage door attachments
10. Roof vent attachments
11. Skylight attachments
12. Impact protective systems (shutters)

Exception (corrosion resistance not required):

1. One-half inch diameter or greater steel bolts

1716.1.2.2 Vented or Enclosed Areas. Metal connectors and fasteners located in vented or enclosed areas may meet the requirements of Section 1716.1.2.1 or shall be epoxy-coated in accordance with ASTM A899. Vented or enclosed areas shall include:

1. Attics
2. Exterior wall stud cavities
3. Crawl spaces
4. Window and door attachments
5. Roof sheathing
6. Wall sheathing

Exception (corrosion resistance not required):

1. One-half inch diameter or greater steel bolts

1716.1.2.3 Conditioned Areas. Metal connectors and fasteners located in conditioned areas are not required to be corrosion resistant. Conditioned areas include:

1. Heated and cooled living areas

1716.1.3 Inland II areas.

1716.1.3.1 Open Areas. Metal connectors and fasteners located in open areas shall be either stainless steel and meet ASTM A167; hot-dip galvanized after fabrication and meet ASTM A123 or ASTM A153; hot-dip galvanized or galvanized prior to fabrication and meet ASTM A653; hot-dip galvanized or electrogalvanized in accordance with ASTM A641; mechanically deposited zinc coatings in accordance with ASTM B695; or electrodeposited zinc coatings in accordance with ASTM B633. Open areas shall include:

1. Porches
2. Decks
3. Carports
4. Exterior wall coverings
5. Roof coverings
6. Metal ties for stone and masonry veneer
7. The underside of elevated structures
8. Anchors for securing mechanical equipment
9. Garage door attachments
10. Roof vent attachments
11. Skylight attachments
12. Impact protective systems (shutters)

Exception (corrosion resistance not required):

1. One-half inch diameter or greater steel bolts

Chapter 23
Wood

Revise Section 2308.2.1 to read as follows:

2308.2.1 Basic wind speed greater than 100 mph (3-second gust). Where the basic wind speed exceeds 100 mph (3-second gust), the provisions of either the AF&PA WFCM, the *IBHS Guidelines for Hurricane Resistant Residential Construction*, or the SBCCI SSTD 10, are permitted to be used in accordance with the limitations of Section 1609.1.1.1.

Chapter 24
Glass and Glazing

Add the following new section:

2405.6 Other skylight assemblies. Skylight assemblies not included within the scope of Section 2405.5 shall be tested in accordance with ASTM E 330.

Add the following new section:

2405.7 Windborne Debris Protection. Protection of skylights in buildings located in windborne debris regions shall be in accordance with Section 1609.1.2.

Add the following new section:

2405.7.1 Testing and Labeling. Skylights shall be tested by an approved independent laboratory, listed by an approved entity, and bear a label identifying manufacturer, performance characteristics, and approved inspection agency to indicate compliance with the requirements of the following specification:

1. ASTM E 1886 and ASTM E 1996, or
2. AAMA 506.

Skylights qualified in this section shall also meet the requirements of 2405.5 or 2405.6.

Chapter 35
Referenced Standards

Add the following standards:

American Architectural Manufacturers Association
1827 Waldon Office Square, Suite 550
Schaumburg, IL 60173

Standard Reference Number	Title	Referenced in code section number
<u>506-06</u>	<u>Voluntary Specification for Hurricane Impact and Cycle Testing of Fenestration Products</u>	<u>2405.5</u>

Door and Access Systems Manufacturers Association International
1300 Summer Avenue
Cleveland, OH 44115-2851

Standard Reference Number	Title	Referenced in code section number
<u>115-2003</u>	<u>Standard Method for Testing Garage Doors: Determination of Structural Performance Under Missile Impact and Cyclic Wind Pressure</u>	<u>1609.1.2.2</u>

Institute For Business and Home Safety
4775 East Fowler Avenue
Tampa, FL 33617

Standard Reference Number	Title	Referenced in code section number
	<u>2005 Guidelines for Hurricane Resistant Residential Construction</u>	<u>1609.1.1, 1609.1.1.1, 2308.2.1</u>